

embodiments, device **300** may be a notebook computer. In at least some embodiments, face **301** may include a display face, i.e., a face that is wholly or partially defined by a substantially transparent glass or plastic portion **302** that allows a user to perceive a display **303** therethrough. Glass or plastic portion **302** may also be referred to herein as a display glass or cover glass, although it will be understood that it need not be made of glass, as it may be made of a variety of different types of glass, plastic, or similar material depending on the application.

[0023] Display **303** may take a variety of forms. In some embodiments, display **303** may be a touch-sensitive display, including a capacitive multi-touch display. Such a configuration may include a variety of layers that are omitted from FIG. **3A** for clarity. Such layers may include multiple layers associated with the display portion (such as layers of a liquid crystal display, light emitting diode, display, organic LED display, etc.). Such layers may also include multiple layers associated with the touch sensing portion (drive electrode layers, sense electrode layers, etc.) The various layers may be disposed and/or interleaved in any suitable arrangement.

[0024] Device **300** may be contained within a housing that is defined by the cover glass **302**, housing frame **304**, and back **307**. Housing frame **304** may be made of a metallic material such as aluminum or stainless steel. In other embodiments, housing frame **304** could be made of a non-metallic material, such as a suitable plastic. The material and its electrical and magnetic properties may be relevant to design and configuration of the wireless power transmitter assembly, as described in greater detail below. Housing frame **304** may be a single piece that defines the entire perimeter of the device. In other embodiments, housing frame **304** may be constructed in segments. In either case, housing frame **304** may be joined to cover glass **302** and back **307** by any suitable arrangement **305**, which may include an adhesive or other suitable connecting system. In at least some embodiments spacers **306** may be provided to cushion, position, and or provide a suitable visual effect when looking at the top face **301** or bottom face **308** of device **300**.

[0025] The back **307** of device **300** may be made of a metallic material, such as aluminum or stainless steel. In other embodiments, back **307** may be made from a non-metallic material, such as plastic or glass. As with frame **304**, the electrical and material properties of back **307** may be relevant to the design and configuration of the wireless power transmitter assembly, as described in greater detail below.

[0026] Top glass **302**, frame **304**, and back **307** define the enclosure of personal electronic device **300**. Also contained within the enclosure of device **300** is the wireless charging assembly **310**. The cross-sectional shape of wireless charging assembly **310** depicted in FIG. **2** is schematic only, and is meant to depict that the exact shape may take a variety of forms depending on the particular design. In at least some embodiments, it may be desirable for wireless charging assembly **310** to butt up against the underside of display glass **302** at the location where accessory **202** (not shown in FIG. **2**) will be positioned for charging. The thickness of display glass **302** may be a significant portion of the “air-gap” between the charging coil and a receiving coil in the accessory to be charged. Thus, it may be desirable to control/optimize this thickness. For example, it may be desirable for display glass **302** to have a thickness less than

about 0.3 mm. Additionally, it will be necessary for charging assembly **310** to fit around display components **303** and housing frame **304** to fit the available space within the enclosure of a particular embodiment. It will be appreciated that it is often desirable to maximize space used (or minimize wasted space) within personal electronic devices to reduce their size. However, in at least some embodiments, some free space may be provided if required, for example, if necessary for cooling or other design considerations.

[0027] FIG. **3** illustrates a slightly more detailed cross-sectional view of device **300**. Corresponding elements have been identified with corresponding numbers for the items discussed in FIG. **2**. The depiction of wireless charging assembly **310** has been expanded to show certain of its components. More specifically, wireless charging assembly **310** includes a ferrite core **312**, which may take a variety of forms as described in greater detail below. Wireless charging assembly **310** also includes a transmitter coil (or winding) **314**, which may be wound around ferrite core **312** as described in greater detail below. In at least some embodiments wireless charging assembly **310** may also include a shield **316**, which may be made from a metallic material. In some embodiments, shield **316** may be copper, although other suitable materials may also be used.

[0028] FIG. **3** also depicts magnetic flux **320** that may be generated by suitably driving the coil **314** using an inductive power transmitter circuit. Various embodiments of such circuits are known, and thus their details are not provided here. In general, such circuits include a power supply and an inverter that generates an AC voltage/current having a suitable frequency from the power supply. When coil **314** is driven with this AC voltage/current, magnetic flux **320** delivers energy to a wireless power receiver incorporated into an accessory positioned as shown in FIG. **1**.

[0029] FIG. **4** illustrates a perspective view of a wireless charging coil assembly **410** that may be used for accessory charging in a personal electronic device. Wireless coil charging assembly **410** may correspond to wireless charging assembly **310** illustrated in edge-on view in FIGS. **2** and **3**. Wireless charging coil assembly **410** can include a core **420** having a winding **440** disposed thereon. Numerous different core and winding configurations may be employed, and the illustrated configuration is but one example. Core **420** may be made of any suitable high-permeability magnetic material, such as ferrite. Various ferrite materials are available and are suitable for different applications depending on field strength, frequency, and other design parameters.

[0030] Exemplary core **420** in FIG. **4** may be considered a pot core or modified pot core design, which includes posts **422** and **424** about which winding **440** is disposed, as described in greater detail below. In other configurations, winding **440** may be disposed about another portion of the core, such as central portion **450**. Pot cores may be identified by their base portion (e.g., **420**) and a central post (e.g., **422**, **424**) about which a winding may be disposed. Some pot cores may also include raised walls extending from the base that circumscribe the post or posts. The shape of such cores may be considered to be generally similar to a cooking pot, hence the reason for their name. It should be noted that core **420** in FIG. **4** does not include the wall portions, and includes two posts **422**, **424** about which the windings are disposed, and thus may be considered to be a modified pot core (as noted above). Pot core and modified pot core configurations may be advantageous for at least some